

ABSTRACT

A voltage regulator including at least one coupled inductor including a first winding and a second winding each having a polarity. The first winding and the second winding connected in series to form a common node such that the first winding and the second winding have the same polarity. The first winding and the second winding having a coefficient of coupling approximately equal to one. A conduction switch having an on-state and an off-state, to controllably conduct an input voltage to the at least one coupled inductor at a switching frequency. A freewheeling switch having an on-state and an off-state, in communication with the common node of the at least one coupled inductor to provide a path for current when the conduction switch is in the off-state. An output capacitor in communication with the at least one coupled inductor to filter the output voltage.